January 17, 2025

Selection Committee
National Bureau of Economic Research
Innovation Boot Camp

Dear Selection Committee,

I am writing to express my strong interest in participating in the 2025 NBER Innovation Research Boot Camp. As a third-year Economics PhD student at Northwestern University, I am deeply passionate innovation, science, progress and technology — full stop. Getting to study these things is a bonus I get as a researcher.

My fascination with innovation and progress started perhaps earlier than I myself realized – as a child, when asked which historical period I'd choose to live in, I always picked the future, while everyone I knew wanted to relive the past. This early interest in science fiction and technology has evolved into a scholarly pursuit of understanding how innovation works, and how to foster it.

I sincerely believe economic growth is the most important question in economics. Within this broader theme, I see two crucial components: frontier growth and catch-up growth. I've chosen to focus on frontier growth – studying how societies push the boundaries of human knowledge and capabilities through science and innovation – because I love it, and I see it as the fundamental driver of long-term progress.

My path to economics has been anything but conventional. After majoring in International Relations and Philosophy, I published a poetry book and pursued music while aspiring to be a diplomat. It was only when studying economics for civil service exams that I discovered an unexpected passion. Economics gave me a new lens through which to view long-run growth and technological progress, connecting back to my longtime fascination with science fiction and innovation

Since joining Northwestern, I've been fortunate to work closely with faculty at the frontier of innovation research. The boot camp would be an excellent opportunity to connect with both leading scholars and like-minded graduate students.

My recommendation letter will be provided by Professor Benjamin Jones from Northwestern Kellogg (bjones@kellogg.northwestern.edu), who is my advisor.

Thank you for considering my application.

Sincerely,

Pedro Aldighieri
PhD Student in Economics
Northwestern University
pedro.aldighieri@u.northwestern.edu
Phone: +1 773-681-4496

# Pedro Braga Aldighieri Soares

*Updated January 16, 2025 (Get latest)*

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**Website**: p-aldighieri.github.io/
**LinkedIn**: //pedrobasoares
**Citizenship**: Brazilian, Italian

## Education

**Northwestern University** — Evanston, IL
PhD in Economics — Fall 2022 – Present

**Pontifical Catholic University of Rio (PUC-Rio)** — Rio de Janeiro, RJ
MSc in Economics — January 2020 – April 2022
Advisor: Leonardo Rezende, *GPA: 8.9/10*

**Pontifical Catholic University of Rio (PUC-Rio)** — Rio de Janeiro, RJ
BA in International Relations — 2007 – 2010

**Federal University of Rio de Janeiro (UFRJ)** — Rio de Janeiro, RJ
Philosophy major, no degree awarded or expected — 2007/2009 – 2010/2013

## Work experience

**National Agency of Cinema (ANCINE)** — Rio de Janeiro, RJ
Analyst — April, 2014 – August, 2022
Tenured civil servant in the regulatory body for audiovisual in Brazil, admitted through civil service exams (applicant-to-hire ratio 500:1). Formerly advisor to the Executive Officer (2019).

**Office of the Attorney General** — Rio de Janeiro, RJ
Technician — November, 2013 – April, 2014
Tenured civil servant in the Federal Office of the Attorney General, admitted through civil service exams (applicant-to-hire ratio 200:1). Worked in tech support.

**Elsevier** — Rio de Janeiro, RJ
Freelance translator — March, 2012 – October, 2013
English-Portuguese translator and reviewer.

## Teaching experience

TA, Econometrics, Northwestern University, Fall 2023
TA, Econometrics for Policy Analysis, SESP/Northwestern, Spring 2024
TA, Economics of Public Policy , SESP/Northwestern, Summer 2024
TA, Topics in Health Policy , SESP/Northwestern, Summer 2024
TA, Game Theory, SESP/Northwestern, Fall 2024
TA, Judgment & Decision-Making SESP/Northwestern, Fall 2024

## Research experience

Research Assistant, Kieu-Trang Nguyen, Northwestern Kellogg, Spring 2024
Research Assistant, Ryan Hill, Northwestern Kellogg, Summer 2023

Research Assistant, Jeffrey Miron, Harvard University, 2021/2022
Research Assistant, Giuliana Pardelli, NYU-Abu Dhabi, Summer 2021

## Honors and scholarships

Emergent Ventures Fellowship 35th Cohort 2024
CAPES Scholarship (declined due to concomitant work) 2020
$2^{nd}$ general rank in the national admission exams out of 1344 candidates (Brazilian Association of Economics Graduate Programs [ANPEC]) 2019

## Skills

**Programming**
Python, Stata.

**Languages**
Portuguese (native), English (fluent), French (advanced), Spanish (intermediate)

## Selected Policy Publications

**Under Rent Controls, Everyone Pays**
Pedro Aldighieri and Jeffrey Miron.
*In Bourne, Ryan (ed.), The War on Prices, Cato Institute, May 2024.*

**Legalized Marijuana**
Pedro Aldighieri and Jeffrey Miron.
*Milken Institute Review, Third Quarter 2022.*

**Is There Monopsony Power in U.S. Labor Markets?**
Pedro Aldighieri, Ryan Bourne, and Jeffrey Miron.
*Regulation, Vol. 45 No. 2, Summer 2022.*

**Prosaico**
Pedro Braga Soares
Early poetry book in Portuguese. Available at Amazon.
*Rio de Janeiro: 7Letras, 2010.*

## Other interests

Recorded two studio albums, featuring as a drummer, backing vocalist, lyricist and arranger. Spotify and YouTube links

# PhD Coursework in Economics
Pedro Aldighieri

January 16, 2025

## 2022 Fall

- ECON 410-1: Microeconomics
- ECON 411-1: Macroeconomics
- ECON 480-1: Econometrics

## 2023 Winter

- ECON 410-2: Microeconomics
- ECON 411-2: Macroeconomics
- ECON 480-2: Econometrics
- MECS 548-0: Innovation Economics and the Science of Science

## 2023 Spring

- ECON 410-3: Microeconomics
- ECON 411-3: Macroeconomics
- ECON 480-3: Econometrics

## 2023 Fall

- ECON 414-1: Economics of Information
- ECON 450-1: Industrial Organization
- ECON 481-1: Advanced Econometrics

## 2024 Winter

- ECON 412-2: Economic Theory and Methods
- ECON 420-2: European Economic History
- ECON 450-2: Industrial Organization

## 2024 Spring

- ECON 450-3: Industrial Organization
- ECON 481-3: Advanced Econometrics
- MECS 540-2: Political Economy II

**Research Statement: NBER Innovation Boot Camp – Pedro Aldighieri**

My current research focuses on the economics of science, science of science, and innovation: how institutions, incentives, and tools affect the production of knowledge.

More broadly, I think of innovation not only as a subject of study, but as a tool and guide for research. I adopted new technology in my workflows and research, using Machine Learning techniques and Large Language Models (LLMs).

My primary research project, carried out jointly with my colleague Franco Malpassi, examines how the introduction of digital computers shaped the production of scientific research in U.S. universities between 1945 and 1970. By leveraging the staggered timing of computer installations across different institutions, our analysis investigates the effects of these early computers on research quality, the direction of inquiry, and the characteristics of early adopters. We also plan to employ cutting-edge natural language processing tools—particularly LLMs —to study how researchers were actually using these machines. This includes identifying whether they served predominantly as faster calculation devices, objects of scientific study in their own right, or catalysts for entirely new lines of research.

For this project, we are assembling a novel dataset that documents every computer installation at U.S. universities from 1945 to 1970. So far, we have digitized 53 survey-year pairs from a range of institutions, consolidating data on more than 150 universities (out of 800+ in the raw data).

Work in progress includes several other projects at various stages of development:

- A project examines how state repression affects science and scientists through the case of Lysenkoism in the Soviet Union. We leverage the 1948 VASKhNIL conference as a quasi-exogenous shock to Lysenko's political authority to study its effects on USSR Academicians. Early results suggest the impact of political repression, as measured by publication records, while significant, was more temporally contained than previously believed.

- A joint project with my colleague Eleftheria Kekeridou examines the asymptotic properties and estimator characteristics of symbolic regressions and genetic algorithms (SR/GA), a machine-learning approach that constrains resulting functions to more interpretable components and operators. As a use case, we plan to apply these techniques to production function estimation to see if SR/GA recover anything that resembles the stylized PF economists use.

Other early-stage projects include: **(a)** documenting and understating why universities last so long; and **(b)** understanding how a field shifts paradigm and who benefits and loses, using as a case study plate tectonics and geology.

Needless to say, the NBER Innovation Research Boot Camp would be invaluable for developing this research agenda. The program's focus on frontier questions in innovation economics aligns perfectly with my interests. Moreover, the opportunity to engage with leading scholars and peers in innovation economics would help refine my methodological approaches and identify new applications for these techniques.

NORTHWESTERN UNIVERSITY
Kellogg
School of Management

**Strategy Department**

7 February 2025

Recommendation Letter for Pedro Aldighieri

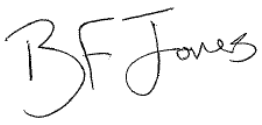
Dear Kevin, Ina, and Kyle:

Since I believe we are randomizing, I'll keep this short. Pedro is a very interesting PhD student here at Kellogg, currently in his 3rd year. His research is promising. His agenda is at the intersection of innovation/science and economic history. The paper on the adoption of mainframe computers across US universities has drawn together fascinating, granular data and is generating neat results. The paper promises to fill holes in the literature in understanding how physical capital/machines influence the direction and success of research. His paper on Soviet biology research, and Stalinist influence, is also fascinating, and informs big questions about how political ideology and authoritarianism can affect research directions and success.

So – he's neat. I would put him in the top bucket.

Please let me know if you would like further information.

Sincerely,



Benjamin F. Jones
Gund Family Professor of Entrepreneurship
Kellogg School of Management
bjones@kellogg.northwestern.edu